ONIS "TREY" GLENN, III
DIRECTOR

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GOVERNOR

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October 2, 2008

Mr. James I. Palmer, Jr.
Regional Administrator, US EPA Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

Dear Mr. Palmer:

We have received your letter dated August 19, 2008, in which you notified Governor Riley of EPA's plan to modify the 24-hour fine particulate matter ($PM_{2.5}$) nonattainment area boundaries that Alabama recommended in December 2007. In your letter, you also requested that any additional information that should be considered by EPA in this decision-making process be submitted by October 20, 2008. We have conducted a thorough review of the extensive information included with your August 2008 letter, and, as a result, we not only request that EPA shrink the scope of its recommended area regarding Birmingham, but we have altered our initial recommendation. We concur with EPA's proposed designation of Etowah County as unclassifiable based on incomplete data for the Gadsden monitor for the 2005-2007 time period.

ADEM has the legal authority to impose reduction measures in any area of our State, as necessary, to attain the NAAQS, regardless of which areas are formerly designated as nonattainment. Accordingly, in our December 2007 submittal, the only counties that we recommended be designated nonattainment were those with monitoring data exceeding the 24-hour $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS). High background $PM_{2.5}$ levels present in the entire Eastern United States and emissions generated in the local area around the violating monitors are the major causes of the elevated $PM_{2.5}$ concentrations. Accordingly, air pollution controls necessary to mitigate regional background levels must be regional or national in nature. Currently, analyses are underway to determine Reasonably Available Control Technology (RACT) for local emissions sources potentially affecting the violating monitors in Jefferson County. In your August 19th letter, you indicate that EPA is considering the addition of one complete county, Shelby County, and one partial county, Walker County, for designation as nonattainment. There are no practical or legal reasons for these two additional counties to be designated as nonattainment, with the attendant sanctions with which such areas are burdened.

To repeat, the State-specific reduction measures which will be needed for attainment are likely to occur only in the area covered by our proposal for a partial-county area. In the unlikely event that further State-specific reduction measures are needed outside the boundaries of our proposal, ADEM has the necessary authority to impose them.

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In developing our December 2007 recommendations, we closely followed EPA's June 8, 2007, guidance memo, which laid out the factors that should be addressed in the 24-hour $PM_{2.5}$ designation process. Our analysis of those factors supported our recommendation that only those counties that violated the annual $PM_{2.5}$ standard for the 2004-2006 period, Jefferson and Etowah, should be designated nonattainment.

After a thorough review of EPA's recommended modifications and the method used to support those designations, we maintain our original recommendation to designate as nonattainment only those areas with monitoring data exceeding the NAAQS. For the 2005-2007 period, only Jefferson County has monitors that exceed the 24-hour $PM_{2.5}$ standard. In addition, we have included supplemental information in the appendices to further support these recommendations.

EPA proposed the inclusion of a portion of Walker County in the Birmingham nonattainment area. The following highlights the rationale for excluding Walker County from the Birmingham nonattainment area. Detailed information is presented in Appendix A.

- Walker County has a very low population density and VMT compared to Jefferson County.
- The overwhelming majority of NOx and SO2 emissions in Walker County are due to a single utility located in the county (Alabama Power Company – Plant Gorgas). Additional controls have been installed at this power plant since 2005. Flue gas desulfurization scrubbers have been installed on units 8, 9 and 10. Therefore, over 80% of the power generation capacity at Gorgas is being scrubbed. These controls and additional reductions are discussed further in Appendix A. Additionally, ADEM has legal authority to require the installation of additional controls at this facility if necessary.
- The wind infrequently blows from the direction of Walker County towards Jefferson County on days with high $PM_{2.5}$ concentrations.

EPA proposed the inclusion of Shelby County in the Birmingham nonattainment area. The following highlights the rationale for excluding Shelby County from the Birmingham nonattainment area. Detailed information is presented in Appendix B.

- The monitor in Shelby County measures attainment of the 24-hour $PM_{2.5}$ standard, along with five of the eight Jefferson County monitors. Data from monitors located between Shelby County and the non-attaining monitors in Jefferson County do not suggest that Shelby County is significantly contributing to nonattainment in Jefferson County; rather, the data shows an obvious local emissions impact around the violating Birmingham monitors.
- 73% of the MSA population resides in Jefferson County.
- Jefferson County's VMT is approximately 5 times that of Shelby County's.
- The overwhelming majority of NOx and SO2 emissions in Shelby County are due to a single utility located in the county (Alabama Power Company – Plant Gaston). A scrubber will be installed on Gaston Unit 5 in 2010. Unit 5 is the

largest unit at Plant Gaston. These controls and additional reductions are discussed further in Appendix B. Additionally, ADEM has the legal authority to require the installation of additional controls at this facility if necessary.

In our original recommendations, we proposed the inclusion of Jefferson County in the Birmingham nonattainment area. EPA concurred with that recommendation. We are modifying that recommendation to include only a partial area of Jefferson County as nonattainment. Specifically, we recommend that the nonattainment portion of Jefferson County include only the local airshed for the monitors violating the 24-hour $PM_{2.5}$ standard. The following highlights the rationale for including only a portion of Jefferson County in the Birmingham nonattainment area. Detailed information is presented in Appendix C.

- The data from the Jefferson County monitors, along with an air quality study commissioned in 2005 by ADEM and the Jefferson County Department of Health, indicates the clear existence of a local emissions influence on the violating monitors. This study concluded that there is a well-defined local source influence in addition to a regional component of the annual PM2.5 concentrations measured at the Wylam and North Birmingham monitors. Only three of the eight Jefferson County monitors violate the 24-hour standard, all of which will be captured by the partial area that we are proposing for nonattainment designation.

We believe that this analysis provides EPA with adequate information to designate only a portion of Jefferson County as nonattainment for the 24-hour $PM_{2.5}$ NAAQS.

If you have any questions, please contact Ron Gore of my staff at 334-271-7868.

Sincerely,

Onis "Trey" Glenn, III
Director

OTG/CH/ghe

Enclosures

Appendix A
Factors Supporting the Exclusion of Walker County from the Birmingham 24-Hour $PM_{2.5}$ NAA

The following factors provide compelling reasons to exclude Walker County from the Birmingham $PM_{2.5}$ nonattainment area (NAA).

Monitoring Data

Available monitoring data from the area does not indicate a significant contribution from Walker County emissions to the monitored $PM_{2.5}$ values in Jefferson County. The 2005-2007 design value at the Jasper monitor in Walker County is 33.0, which is below the 24-hour $PM_{2.5}$ NAAQS (35 $\mu g/m^3$). In addition, the Providence monitor, located in Jefferson County near the Walker County line, has a design value of 34.6 $\mu g/m^3$. The Corner monitor, also located in Jefferson County near the Walker County line, has a 2005-2007 average of 35.9 $\mu g/m^3$; however, the monitoring values for each year are declining (see Table 1). Also, the Corner monitor is likely to attain the $PM_{2.5}$ 24-hour NAAQS for 2006 – 2008.

The following table presents the design values for all the monitors in Walker and Jefferson County. The table below depicts the 3-year averages from monitors in the area for the period 2005-2007 as well as the 98th percentile values for the years 2005, 2006, and 2007. Figure 1 below depicts monitor locations and corresponding 3-year averages for all monitors in the area. Figure 2 depicts annual $PM_{2.5}$ data for 2007 only.

Table 1 24-hour $PM_{2.5}$ Monitor Data for Walker and Jefferson County

County	Site	2005-2007 DV $\mu g/m^3$	98th %tile 24-hour Values		
			2007	2006	2005
Walker	Jasper	33.0	30.9	34.9	33.2
Jefferson	Corner	35.9	32.5	33.4	41.8
Jefferson	Hoover	32.0	29.8	31.9	34.3
Jefferson	Leeds	34.4	33	32.5	37.6
Jefferson	McAdory	33.4	30.9	33.9	35.5
Jefferson	Pinson	34.9	34.2	33.2	37.2
Jefferson	Providence	34.6	31.4	32.7	39.8
Jefferson	NBHM	44.2	42.8	39.6	50.3
Jefferson	Wylam	40.8	37.7	40.3	44.5

Is should also be noted that five of the eight monitors in Jefferson County measure attainment of the $PM_{2.5}$ standard, which we believe indicates a localized problem. The location of the North Birmingham and Wylam monitors in an industrialized portion of downtown Birmingham further substantiates the argument that localized emissions are contributing to the readings at these monitors.

We believe that these factors fortify the recommendation to exclude Walker County from the Birmingham $PM_{2.5}$ nonattainment area.

Figure 1 $PM_{2.5}$ Monitors with 2005 – 2007 24-Hour $PM_{2.5}$ Design Values

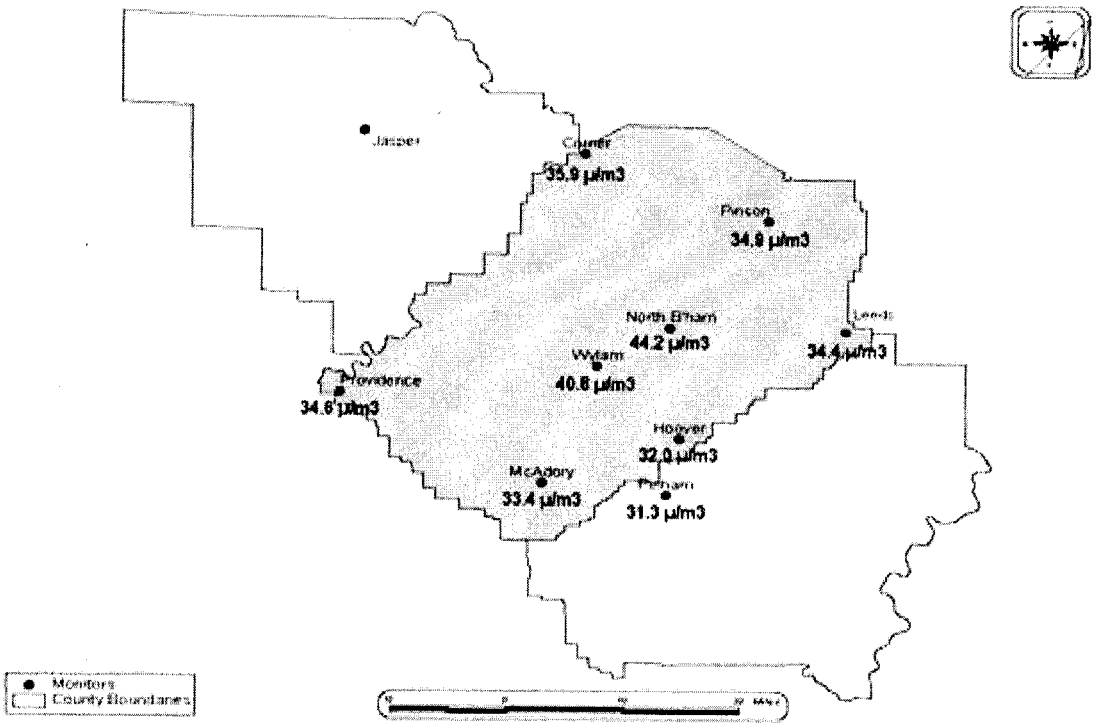
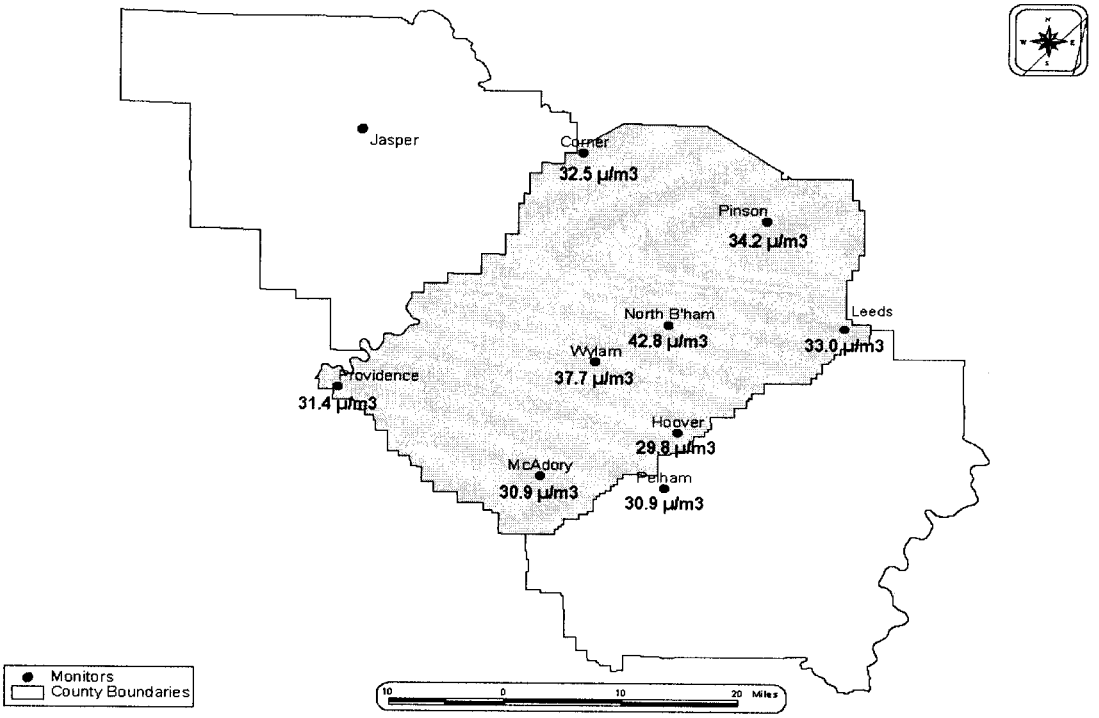


Figure 2 $PM_{2.5}$ Monitors with 2007 24-Hour 98th Percentile Values



Contributing Emissions Score (CES)

EPA defines the CES as "a metric that takes into consideration emissions data, meteorological data, and air quality monitoring information to provide a relative ranking of counties in and near an area." In Enclosure 1 of EPA's preliminary response letter dated August 19, 2008, SO_2 emissions in Walker County are listed as a significant reason for including a portion of Walker County in the NAA. The 2005 emissions data fails to account for the significant SO_2 reductions obtained to date from Alabama Power Company Plant Gorgas as a result of the installation of SO_2 emissions controls. Meteorological data suggests that winds rarely blow from the northwest (from the direction of Walker County) on high $PM_{2.5}$ days, suggesting that Walker County does not significantly impact Jefferson County's monitors. Further, the Jasper monitor in Walker County has a design value below the 24-hour $PM_{2.5}$ NAAQS.

Based on this information, all of Walker County should be excluded from the Birmingham 24-hour $PM_{2.5}$ Nonattainment area.

Population Data

Jefferson County's population density dwarfs that of Walker County. Jefferson County's 2007 population density is 592 people per sq. mile, while Walker County's population density is extremely low at only 86 people per sq. mile.[1] Furthermore, Walker County only experienced a population growth of 4% from 1990 to 2000 and, according to the U.S. Census Bureau, population in Walker County is expected to decline.

Traffic Patterns

Jefferson County's 2006 Daily VMT at 21,185,334 is approximately 10 times that of Walker County's Daily VMT at 2,179,480.[2]

Walker County has 27,448 commuters. Approximately two-thirds (17,293) of the commuters remain in Walker County. Only 6,746 (25%) commute into Jefferson County, which accounts for only 8.5% of commuting into Jefferson County from surrounding counties.[3]

Both the Daily VMT and commuting pattern factors fortify the recommendation to exclude Walker County from the Birmingham $PM_{2.5}$ nonattainment area.

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[1] Population densities were calculated by dividing the population estimates by the land area (in square miles) of each county. The population estimates were obtained from the Alabama State Data Center, which is a network of 27 public agencies working together through a cooperative agreement with the U.S. Bureau of Census to facilitate use and delivery of Census and other data to the public. Internet site: http://cber.cba.ua.edu/est_prj.html.

[2] Daily VMT were obtained from the Alabama Department of Transportation.

[3] Commuting patterns were obtained from the U.S. Census Bureau and are based on the 2000 Census.

Emissions Sources

When originally designated nonattainment for the 1997 $PM_{2.5}$ NAAQS, the portion of Walker County recommended by EPA for nonattainment was included solely for the purpose of including the utility located in that area. This utility, Alabama Power's Gorgas Plant, installed a flue gas desulfurization scrubber (December 2007) on three units, significantly reducing emissions of SO_2. Table 2 compares emissions from quarter 1 and 2 of 2007 to 2008 to show this reduction. Please see below for more detailed control information.

Table 2 Gorgas SO_2 Emissions

QTR	SO_2(tons)		% Reduction
	2007	2008	
1	23,479	7,422	-68%
2	19,830	6,645	-66%

Utility Emissions Controls on Alabama Power Plant Gorgas

Location: Parrish, AL in Walker County
Fuel: Coal

SO_2 Emissions:

- FGD scrubbers installed on units 8, 9, and 10 which began operation in December 2007
- Control efficiency for FGD is expected to be ~95%.
- See Table 2 above for emissions data

NO_x Emissions:

- In 1995, installed Low NOx burners with over-fire air on Unit 9
- In 1999, installed Low NOx burners with over-fire air on Unit 10
- In 2001, installed Low NOx burners with over-fire air on Unit 8
- In 2002, installed SCR on Unit 10
- In 2003, installed Low NOx burners on Units 6 and 7
- Control efficiency for LNB is ~50% and for SCR is ~80%.

NOx Emissions (tpy)	
2001	33,366
2003	13,543

PM Emissions:

- In 1972, installed cold-side electrostatic precipitator on Unit 10
- In 1972, installed hot-side electrostatic precipitators on Units 8 and 9
- In 1997, installed cold-side electrostatic precipitators on Units 6 and 7

Rated Capacity of Units:

- Units 6 & 7: 115 MW each
- Unit 8: 175 MW
- Unit 9: 185 MW
- Unit 10: 700 MW

This data fortifies the recommendation to exclude Walker County from the Birmingham $PM_{2.5}$ nonattainment area.

Meteorology

An examination of the surface winds at the Birmingham airport for 2005–2007 also supports the exclusion of Walker County from the Birmingham MSA nonattainment area. Walker County lies to the northwest of Jefferson County. As the wind rose in Figures 3 shows, surface winds from the direction of Walker County towards the Jefferson County monitors (WNW-NNW) occur less than 5 percent of the time on days when the 24-hour average $PM_{2.5}$ exceeds 35 $\mu g/m^3$. The wind rose for all days in the three-year period is shown in Figure 4. Based on the wind analysis, Walker County very infrequently impacts Jefferson County on high $PM_{2.5}$ days. Therefore, meteorology does appear to be a significant factor in excluding Walker County from the Birmingham MSA $PM_{2.5}$ nonattainment area.

Figure 3 – Birmingham Winds – Days 24-hr PM2.5 Greater Than 35 μg/m³

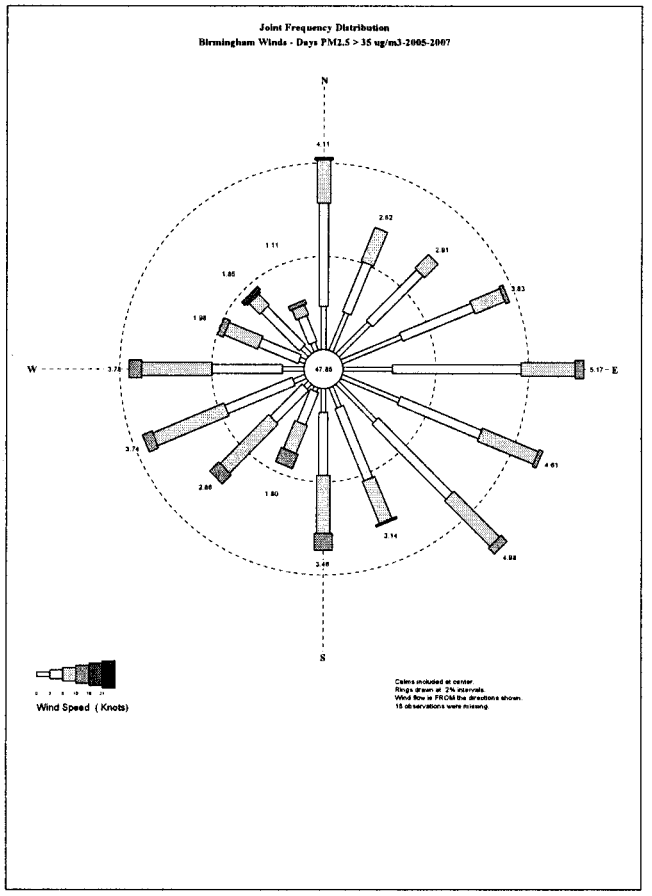
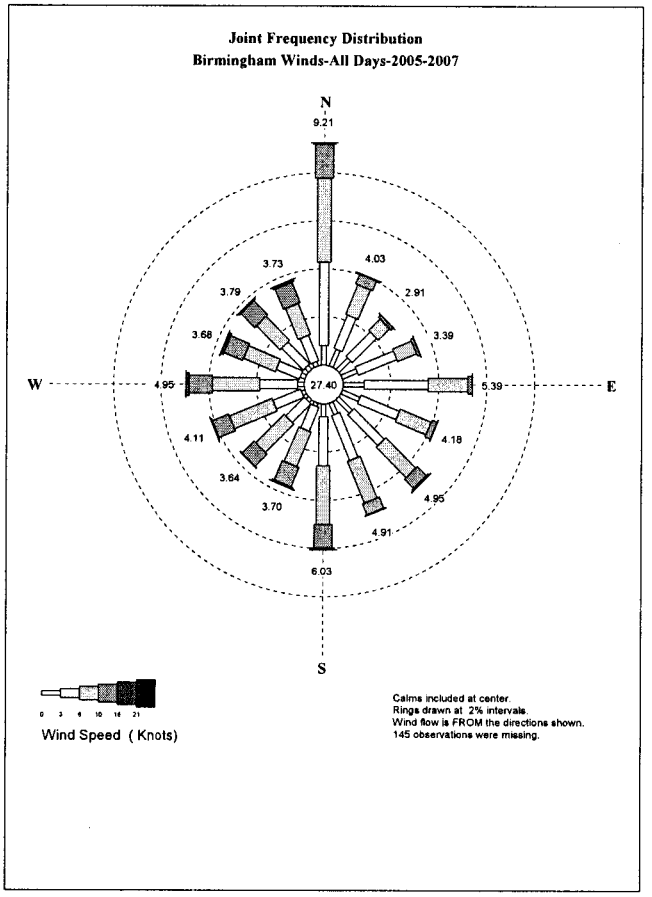


Figure 4 – Birmingham Winds – All Days – 2005-2007



Appendix B
Factors to Exclude Shelby County from the Birmingham 24-Hour $PM_{2.5}$ NAA

We believe the following factors provide compelling reasons to exclude Shelby County from the Birmingham nonattainment area (NAA).

Monitoring Data

Monitoring data for the years 2005 through 2007 indicate that the monitor in Shelby County measures attainment of the 24-hour $PM_{2.5}$ standard. Five of the eight monitors in Jefferson County also measure attainment of the 24-hour $PM_{2.5}$ standard, including monitors located between the Shelby County line and the violating monitors. If emissions in Shelby County were significantly contributing to $PM_{2.5}$ nonattainment in Jefferson County, the 3-year 24-hour averages at the McAdory, Leeds and Hoover sites would be expected to be above the 24-hour standard. However, these monitors measure attainment of the standard. The following table shows the design values for the period 2005-2007 for all the monitors in Jefferson and Shelby Counties. Figure 1 below depicts monitor locations and corresponding 3-year averages for all monitors in the area. Figure 2 depicts 24-hour 98th percentile values for 2007 only.

Table 1 Birmingham 24-Hour $PM_{2.5}$ Design Values 2005-2007

County	Site	2005-2007 DV
Jefferson	N.Bham	44.2
Jefferson	Wylam	40.8
Jefferson	Corner	35.9
Jefferson	Pinson	34.9
Jefferson	Providence	34.6
Jefferson	Leeds	34.4
Jefferson	McAdory	33.4
Jefferson	Hoover	32.0
Shelby	Pelham	31.3

Figure 1 $PM_{2.5}$ Monitors with 24-Hour $PM_{2.5}$ Design Values

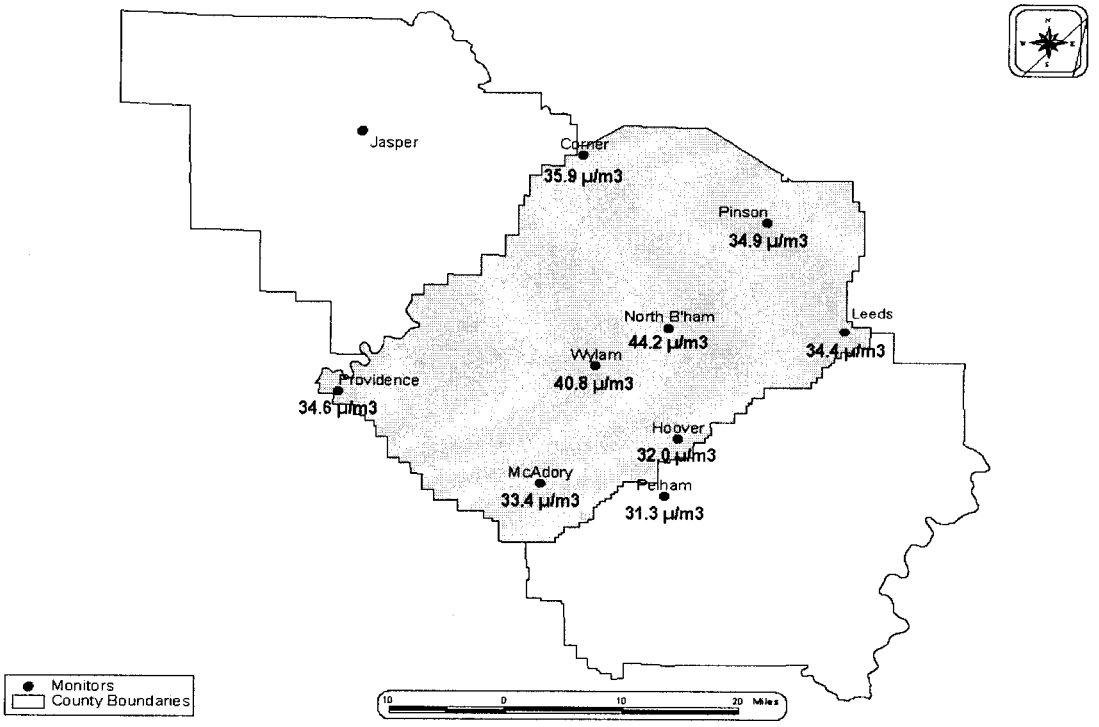
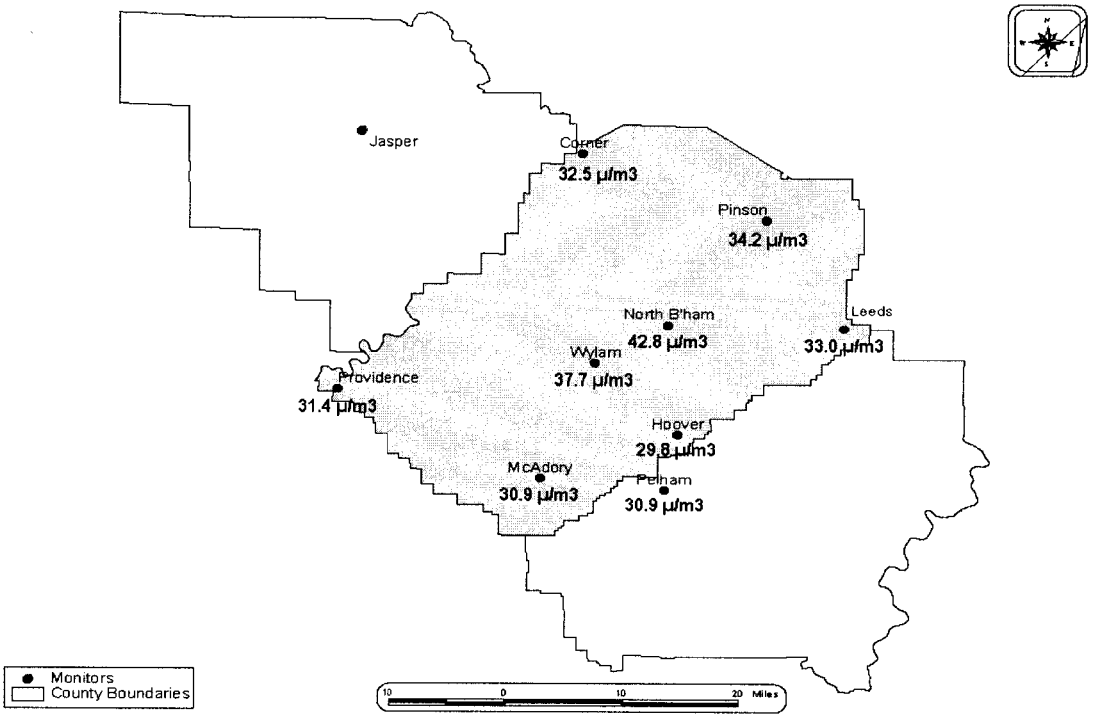


Figure 2 $PM_{2.5}$ Monitors with 2007 24-Hour 98th Percentile Values



Population Data

Of the total population residing in Jefferson and Shelby Counties, 73% reside in Jefferson County (658,779).[1] Jefferson County's estimated 2007 population density dwarfs that of Shelby County. Jefferson County's population density is 592 people per sq. mile, while Shelby County's is less than half of Jefferson County's at 229 people per sq. mile.

Traffic Patterns

Jefferson County's 2006 Daily VMT at 21,185,334 is approximately 5 times that of Shelby County at 4,489,334. Of the total Daily VMT in Jefferson and Shelby Counties, 82% occurs in Jefferson County.[2]

Emissions Sources

The overwhelming majority of NO_X and SO_2 emissions in Shelby County are from point sources (over 82% NO_X and over 99% SO_2). The vast majority of the NO_X and SO_2 emissions in Shelby are due to a large utility located in the county (Alabama Power Company – Plant Gaston). ADEM has the legal authority to require the installation of additional controls as necessary on this utility.

Utility Emissions Controls on Alabama Power Plant E.C. Gaston

Location: Wilsonville, AL in Shelby County
Fuel: Coal

As stated above, the bulk of the SO_2 and NO_X point source emissions from Shelby County can be attributed to Alabama Power's Plant Gaston. However, several control measures have been installed and will not be reflected in any previous inventory.

SO_2 Emissions:

- Installation of a scrubber on Unit 5 is scheduled to be completed March 2010
- Control efficiencies for FGD range from 70-97%,

NO_X Emissions:

- In 1992, installed Low NO_X burners (LNB)on Unit 2
- In 1993, installed Low NO_X burners on Unit 3
- In 1993, installed Low NO_X burners with over-fire air on Unit 5
- In 1994, installed Low NO_X burners on Units 1 and 4
- In 2002, installed Over-fire air on Unit 1
- In 2006, installed SCR on Unit 5
- The control efficiency for LNB is ~50% and for SCR is ~80%.

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[1] Population densities were calculated by dividing the population estimates by the land area (in square miles) of each county. The population estimates were obtained from the Alabama State Data Center, which is a network of 27 public agencies working together through a cooperative agreement with the U.S. Bureau of Census to facilitate use and delivery of Census and other data to the public. Internet site: http://cber.cba.ua.edu/est_prj.html.

[2] Daily VMT were obtained from the Alabama Department of Transportation.

NOx Emissions (tpy)	
2002	29,171
2006	19,839

PM Emissions:

- In 1960, installed hot-side electrostatic precipitators on Units 1
- In 1962, installed hot-side electrostatic precipitator on Unit 4
- In 1973, installed hot-side electrostatic precipitator on Unit 3
- In 1974, installed hot-side electrostatic precipitator on Unit 5
- In 1996, installed a baghouse on Unit 3
- In 1999, installed a baghouse on Unit 2

Rated Capacity of Units:

- Units 1-4: 270 MW each
- Unit 5: 884 MW

Appendix C
Factors to Support the Inclusion of Only a Portion of Jefferson County in the Birmingham 24-Hour $PM_{2.5}$ NAA

The following factors provide compelling reasons to include only a portion of Jefferson County in the Birmingham nonattainment area (NAA).

Monitoring Data

Measurements of fine particulate matter at two air-quality monitoring sites in Birmingham (North Birmingham, NBHM and Wylam, WYL) show high airborne particle concentrations relative to other sites in urban and non-urban portions of Jefferson County, Alabama. Monitoring data for the years 2005 through 2007 at all Jefferson County monitors indicate a strong local industrial influence at the NBHM and WYL monitors. Five of the eight monitors in Jefferson County measure attainment of the 24-hour $PM_{2.5}$ standard. The Corner monitor just exceeds the standard, largely due to an unusually high value in 2005. Preliminary 2008 monitoring data indicates that the Corner monitor will likely comply with the 24-hour standard when the 2005 data is not included in the 3-year average. The following table shows the design values for the period 2005-2007 for all the monitors in Jefferson County. The map in Figure 1 below depicts monitor locations and corresponding 3-year averages for all monitors in the area. Figure 2 depicts 24-hour $PM_{2.5}$ 98^{th} percentile values for 2007 only.

Table 1 Jefferson County 24-Hour PM2.5 Design Values 2005-2007

County	Site	2005-2007 DV
Jefferson	N.Bham	44.2
Jefferson	Wylam	40.8
Jefferson	Corner	35.9
Jefferson	Pinson	34.9
Jefferson	Providence	34.6
Jefferson	Leeds	34.4
Jefferson	McAdory	33.4
Jefferson	Hoover	32.0

Figure 1 $PM_{2.5}$ Monitors with 24-Hour Design Values

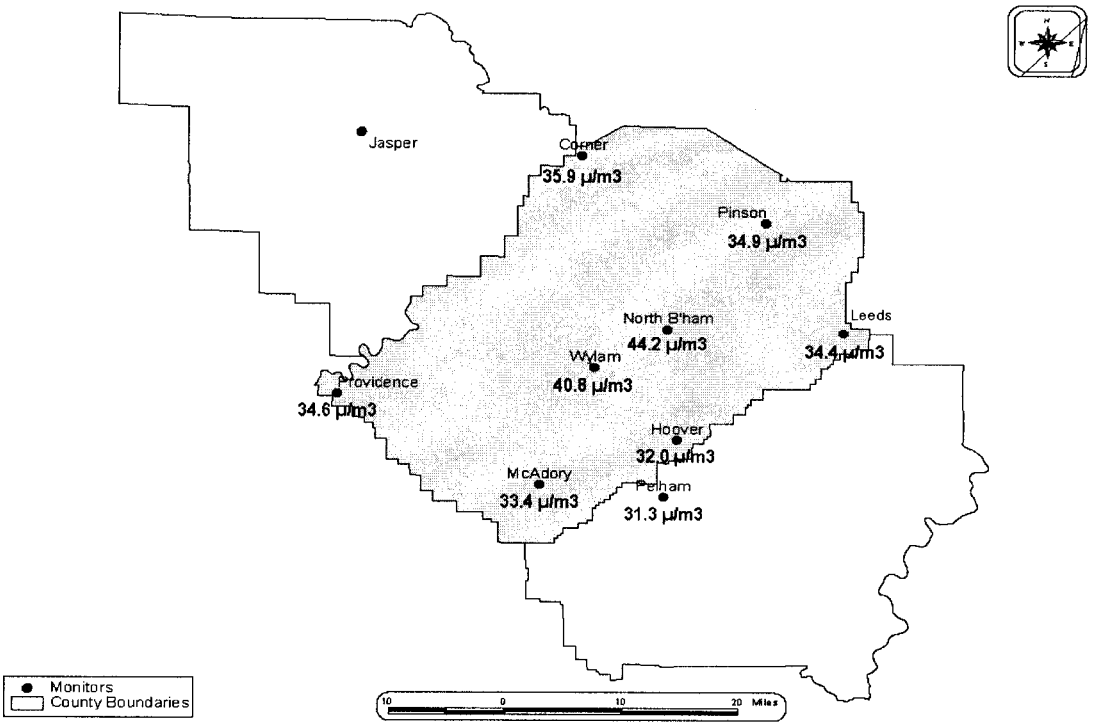
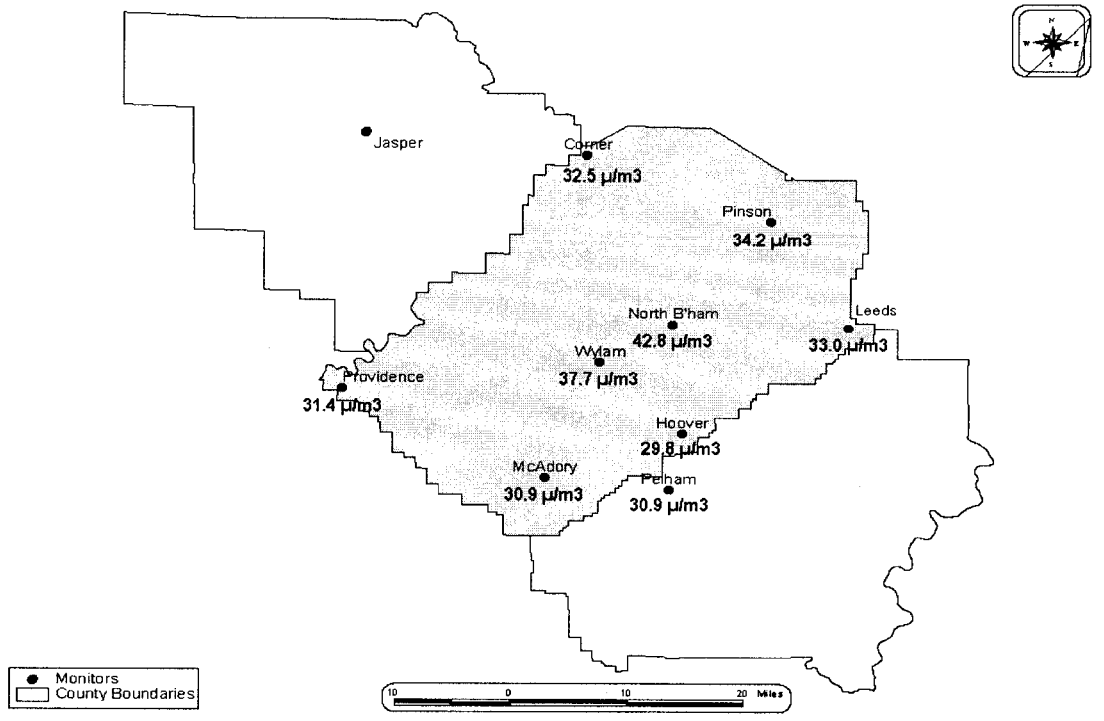


Figure 2 $PM_{2.5}$ Monitors with 2007 98th Percentile 24-Hour Concentrations



Emissions Sources

In 2005, ADEM and the Jefferson County Department of Health (JCDH) contracted with Envair to conduct a study to aid in developing an annual $PM_{2.5}$ Attainment SIP. Specifically, the study was to investigate the source(s) of particulate matter pollution in and around the NBHM and WYL monitors, as monitoring data clearly indicated a strong local influence on the high particulate matter concentrations. The study found that:

> *The analysis of PM concentration observations and PM chemical composition in BHM indicates that the metropolitan area is exposed to a large regional influence, supplemented by a general urban component and a significant influence of local sources. At a given time, these components depend on source emissions, and local or regional aerometric conditions. At the two important mid-town monitoring locations, NBHM and WYL, local, neighborhood stationary sources are important factors, with a complementary contribution of emissions from local transportation sources, including motor vehicles and railroads. The results suggest opportunities for PM2.5 emission reductions to decrease average ambient concentrations observed at NBHM and WYL, assuming that practical means can be found to reduce PM emissions in manufacturing and associated fugitive and process emissions.*
>
> *The results from this study represent a state-of-the-art source-receptor analysis using observational and emissions data, but without applying air quality modeling. The evidence obtained identifies local emission source complexes to be considered for midtown PM emission reductions, within which may be found facilities for coke production, mineral wool manufacturing, iron and steel and non-ferrous metal processing, limestone quarrying, and asphalt tar processing. While the specific influence of the transportation sector is less well-defined in the data, evidence from other studies and the evidence from the analyses reported suggest that transportation is also important as a source of particles not only in the mid-town area, but in the metropolitan area as a whole.*

As a result of the study findings, ADEM and JCDH performed air quality modeling analyses to identify specific industrial sources that had the potential to directly impact the particulate concentrations in the area of the violating monitors. The modeling identified 10 facilities which utilize processes that are likely contributors to the high concentrations found at the NBHM and WYL monitors. Subsequently, ADEM and JCDH required these facilities to perform RACT analyses for all processes identified through the modeling process. ADEM and JCDH are continuing analyses to determine RACT for these facilities. While this is being done to address the annual $PM_{2.5}$ violations, the reductions achieved through the RACT controls will also aid in attaining the 24-hour $PM_{2.5}$ standard.

The study also indicated that the transportation sector is a source of the high particulate matter concentrations at NBHM and WYL. ADEM was recently awarded $196,000 through the Diesel Emissions Reduction Act of 2005 to fund diesel retrofit projects in the Birmingham area. ADEM has partnered with the Alabama Clean Fuels Coalition (ACFC) to work with 2 of the 10 above-mentioned facilities to retrofit a

portion of their diesel fleets. These fleets include on-road diesel vehicles, heavy-duty diesel equipment, and switcher locomotives. One of these facilities is located approximately ¼ mile from the NBHM monitor. In addition to the DERA funding, $600,000 in CMAQ funding secured by ADEM and the ACFC through the Alabama Partners for Clean Air will be utilized to address the diesel emissions in the area of the violating monitors.

The full Envair Study was submitted to EPA in our original recommendation package.

Recommendation

As a result of the above conclusions, ADEM believes that designating the entire county as nonattainment is unnecessary given the obvious local emissions influence on the high concentrations found at the NBHM and WYL monitors. Given the fact that the Corner monitor is also currently in violation of the 24-hour $PM_{2.5}$ standard, we propose two partial county designation scenarios that we feel will adequately address the violations at the Jefferson County monitors.

The first scenario assumes that the North Birmingham, Wylam and Corner monitors all violate the $PM_{2.5}$ 24-hour NAAQS. In this scenario, the nonattainment area would include all census tracts in the "Community Monitoring Zone" (CMZ) which contained the NBHM and WYL monitors, and the census tracts in an area north of the CMZ which would contain the Corner monitor. The CMZ was developed for the purpose of performing spatial averaging of the NBHM and WYL monitors for the annual $PM_{2.5}$ standard. The CMZ very well describes the meteorological and emissions air shed in the area of the NBHM and WYL monitors. Tracts that have areas both inside and outside of the CMZ boundary were included in their entirety. This area would be described as follows:

> CMZ – Beginning at the intersection of CR-29, Forest Road, and CR-46 N (in Hueytown), follow Forest Road to CR-76. Proceed E on CR-76 to CR-59, and E on CR-59 to CR-65. Proceed E on CR-65 to SH-269. Proceed due E (in an imaginary line) from the intersection of CR-65 and SH-269 to where this line intersects US H-78 and CR-94. Proceed E on CR-94 to I-65. From this point, follow I-65 N to the intersection of US H-31. Follow US H-31 to CR-124. Follow CR-124 S to SH-79. Proceed E on SH-79 to CR-154. Follow CR-154 SE to CR-126. Proceed on CR-126 to SH-75. Follow SH-75 W to I-59, and proceed E on I-59 to the point at which it crosses the ridgeline of Red Mountain. At this point, follow the ridgeline of Red Mountain W to the point at which the Raimund Muscooda Road intersects SH-150. Follow the Raimund Muscooda Road to the intersection with Green Road. From this point, follow an imaginary line due N to the point at which the Birmingham Southern RR crosses under I-20. Follow Birmingham Southern RR NE to 19th Street to CR-46, and then proceed N on CR-46 to the intersection of CR-46 and CR-29.

Analysis of wind data on days when the Corner monitor had $PM_{2.5}$ readings greater than 35 ug/m3 indicates a high frequency of wind directions from the east and southeast directions which is in the general direction of the CMZ relative to the Corner monitor. Therefore, it is likely that many of the high 24-hour $PM_{2.5}$ concentration days

at the Corner monitor are being impacted by emissions from within the CMZ. Therefore, in addition to the census tracts in the CMZ, the partial nonattainment area would also include all census tracts roughly in the area north of the CMZ between US Hwy-78 and I-65 to the Jefferson County line. Including this area in the partial area will bring the violating Corner monitor into the partial nonattainment area. The census tracts to be included in the nonattainment area under this scenario are listed in Table 2 below.

Table 2 – Census Tract IDs Associated with Scenario 1

CMZ Census Tract IDs	1	3	4	5	7	8	11
	12	14	15	16	19.02	20	21
	22	23.03	23.05	23.06	24	27	29
	30.01	30.02	31	32	33	34	35
	36	37	38.02	38.03	39	40	42
	45	47.01	47.02	48	49	50	51.01
	51.02	52	53.02	55	57.01	57.02	59.05
	100.01	100.02	101	102	103.01	103.02	104.01
	104.02	105	106.02	106.03	109	119.01	119.02
	119.03	120.02	123.03	125	130.02	131	132
	133	134	136.01	138.01	139.01	139.02	141.04
Corner Monitor Census Tract IDs	114	115	116	117.03	117.04	120.01	121.03
	124.01						

Maps associated with Scenario 1 are shown below. Figure 3 depicts the census tracts in Jefferson County with the CMZ boundary overlaid in blue. Figure 4 depicts all of the census tracts that are entirely or partially located within the CMZ. Figure 5 depicts all Jefferson County census tracts that are proposed to be designated nonattainment of the 24-hour $PM_{2.5}$ NAAQS.

Figure 3 – Jefferson County Census Tracts with CMZ Outlined

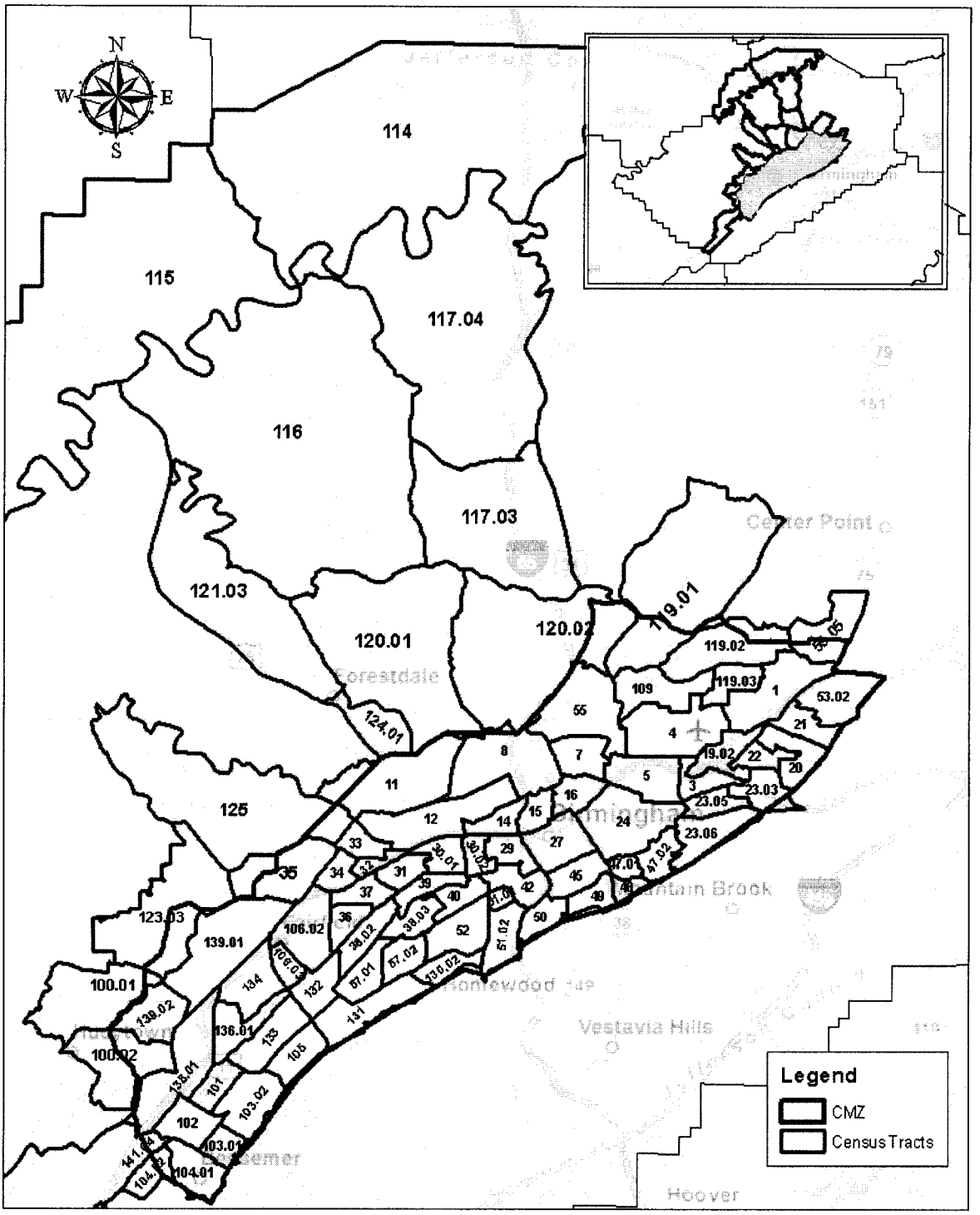


Figure 4 – CMZ Portion of Possible Nonattainment Area

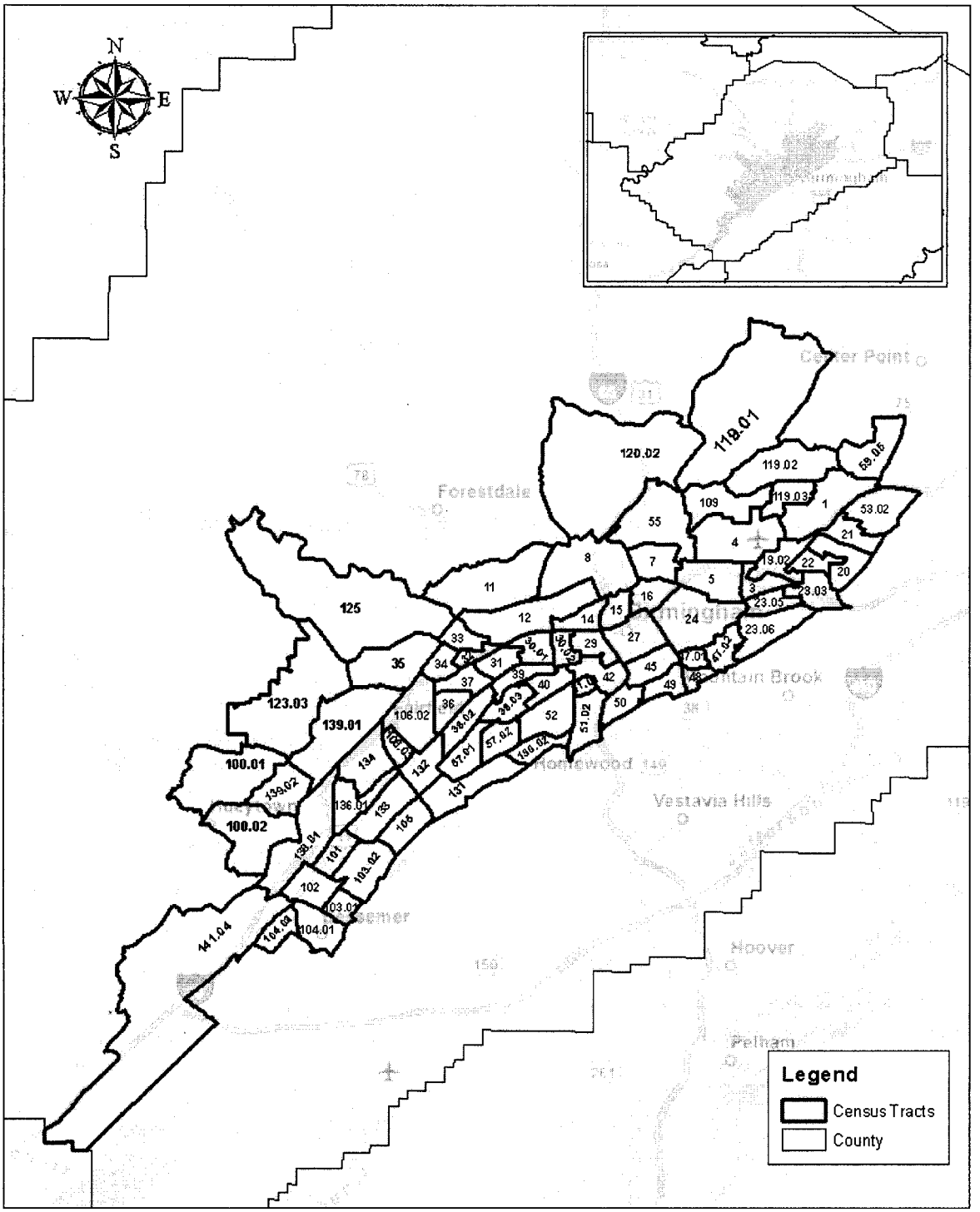
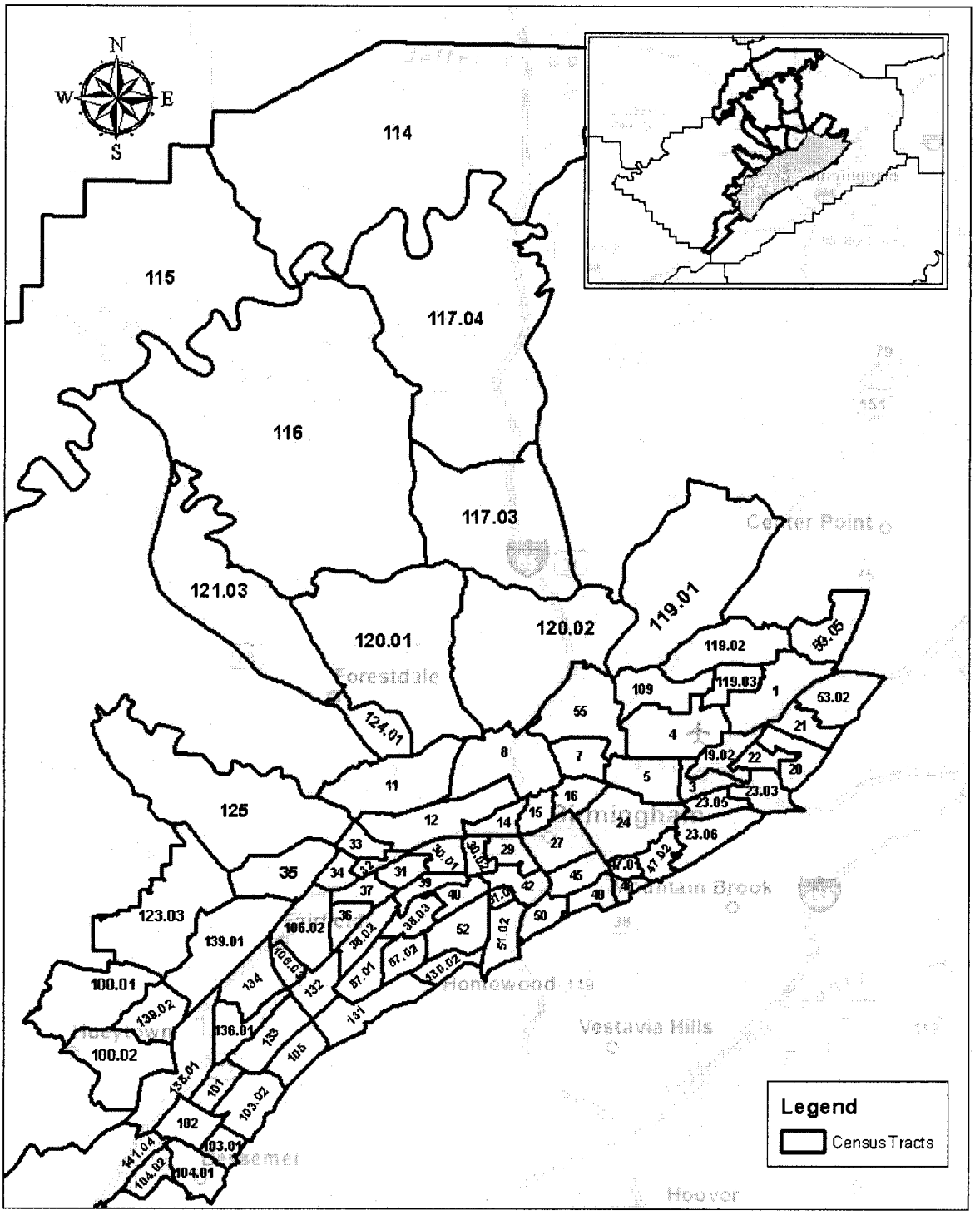


Figure 5 – Proposed Partial Jefferson County Nonattainment Area Under Scenario 1



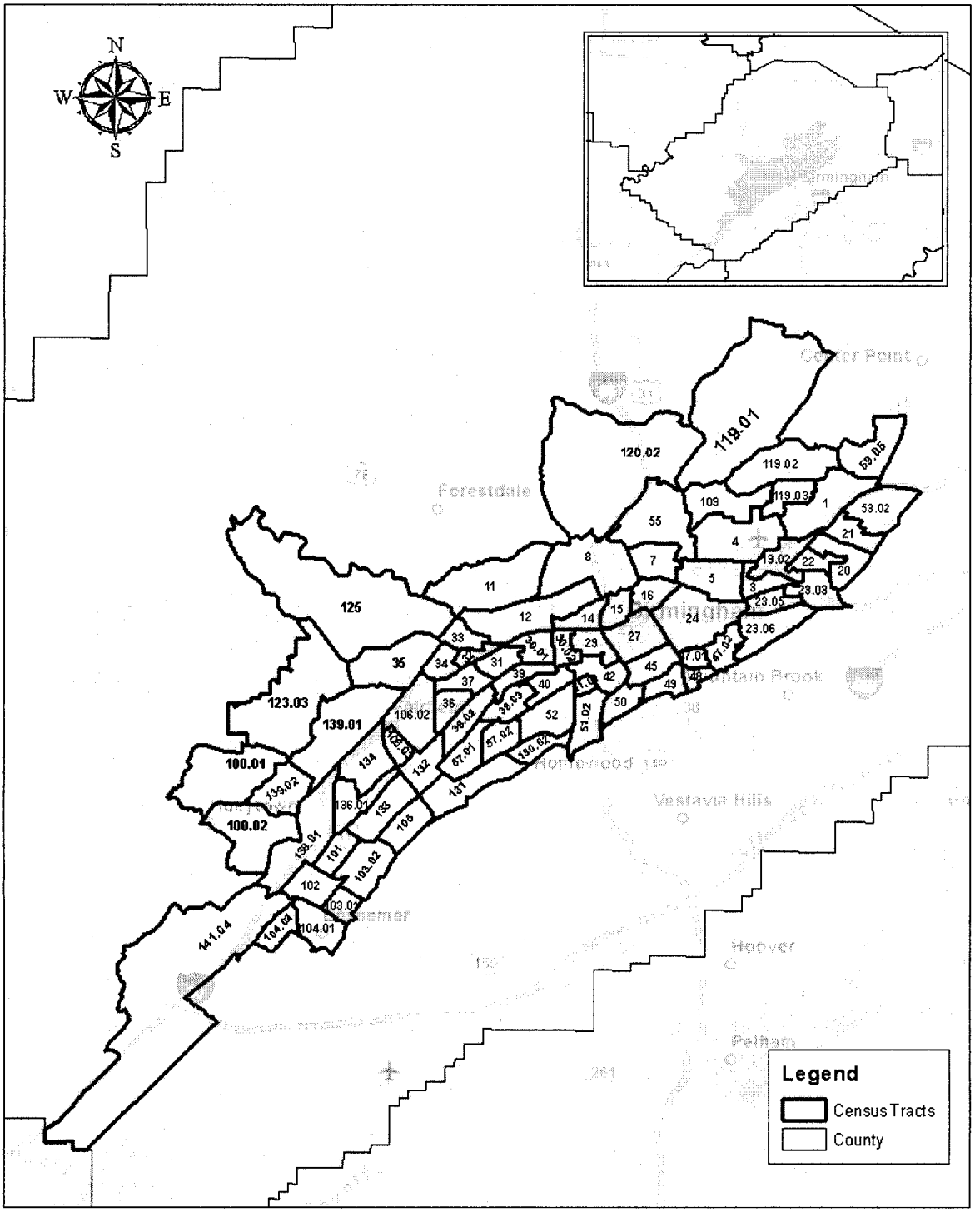
The second scenario assumes that the Corner monitor will attain the standard utilizing 2006-2008 data. Under this scenario, only the census tracts associated directly with the CMZ would be designated nonattainment. The census tracts to be included in the nonattainment area under this scenario are listed in the table below.

Table 3 – Census Tract IDs Associated with Scenario 2

CMZ Census Tract IDs	1	3	4	5	7	8	11
	12	14	15	16	19.02	20	21
	22	23.03	23.05	23.06	24	27	29
	30.01	30.02	31	32	33	34	35
	36	37	38.02	38.03	39	40	42
	45	47.01	47.02	48	49	50	51.01
	51.02	52	53.02	55	57.01	57.02	59.05
	100.01	100.02	101	102	103.01	103.02	104.01
	104.02	105	106.02	106.03	109	119.01	119.02
	119.03	120.02	123.03	125	130.02	131	132
	133	134	136.01	138.01	139.01	139.02	141.04

The map associated with Scenario 2 is shown in Figure 6 below:

Figure 6 – Proposed Partial Jefferson County Nonattainment Area Under Scenario 2



It should be noted that neither of the nonattainment boundary scenarios described above include Alabama Power Company Plant Miller. However, all four units currently have SCR installed. In addition, two of the four units will have flue gas desulfurization (FGD) controls installed by 2011 and the other two units will have FGD controls installed by 2012. Emissions controls on plant Miller are discussed in more detail below.

Utility Emissions Controls on Alabama Power Plant Miller

Location: Quinton, AL, in Shelby County
Fuel: Coal

SO_2 Emissions:

- FGD Scrubbers planned for all four units, two to go online in 2010 and two in 2011.
- Control efficiencies for FGD are expected to be ~95%.

NO_x Emissions:

- In 2003, installed SCR on Units 3 and 4. By consent decree, these controls must be run year-round beginning 5/1/2008.
- In 2005, installed SCR on Units 1 and 2
- The control efficiency for SCR is ~80%.

NOx Emissions (tpy)	
2002	28,035
2005	20,211

PM Emissions:

- In 1978, installed cold-side electrostatic precipitator on Unit 1
- In 1985, installed cold-side electrostatic precipitator on Unit 2
- In 1989, installed cold-side electrostatic precipitator on Unit 3
- In 1991, installed cold-side electrostatic precipitator on Unit 4

Rated Capacity of units:

- Units 1, 2, and 4: 710 MW each
- Unit 3 700 MW

We believe that this analysis provides EPA with adequate information to designate only a portion of Jefferson County as nonattainment for the 24-hour $PM_{2.5}$ NAAQS.